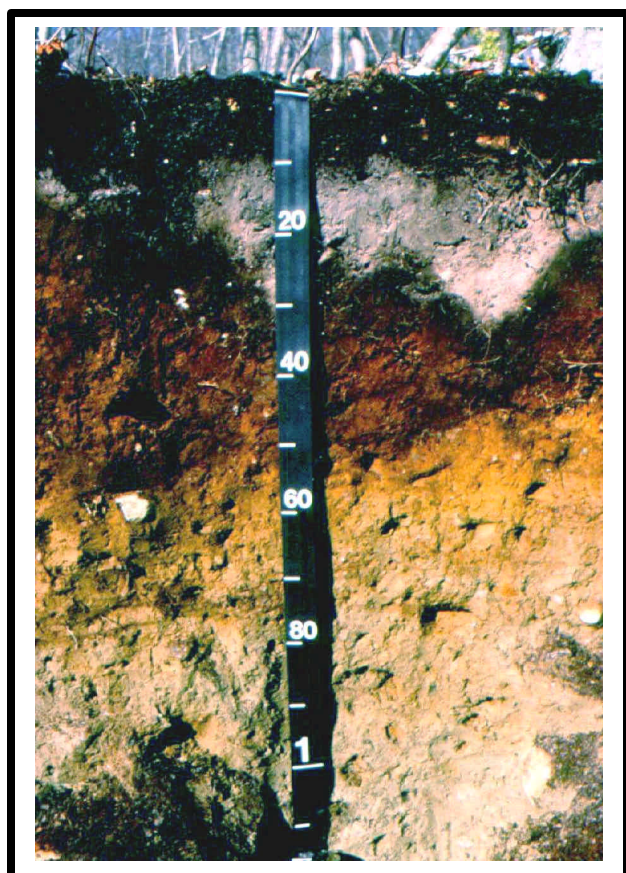


Soil Based Lot Sizing

Environmental Planning for Onsite Wastewater Treatment in New Hampshire



Marlow fine sandy loam

This soil is the State Soil for New Hampshire. It is classified as a Coarse-loamy, isotic, frigid, Oxyaquic Haplorthod. This soil occurs on over 250,000 acres statewide and has been recognized in 9 of the 10 counties in the state.

This well drained soil formed in friable loamy material overlying very firm, slowly permeable, glacial till. The very firm glacial till is a moderately deep restrictive feature that restricts the soil's ability to absorb wastewater or provide groundwater recharge.

Where this soil occurs on slopes of less than 8 percent, the recommended minimum lot size is 54,500 square feet.

Sponsored by:
Society of Soil Scientists of Northern New England

SSSNNE Special Publication No. 4
Version I

September, 2003

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**SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND
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Soil Based Lot Sizing

Environmental Planning for On-Site Wastewater Treatment in New Hampshire

I. Introduction

This report and the Model Lot Size by soil Type Regulation presented within it represents the cumulative efforts and experience of a great number of professional land use planners, soil scientists, septic system designers, hydrogeologists and wetland scientists over a period of greater than twenty years. The concept of soil based lot sizing to protect groundwater quality grew out of the efforts to improve wastewater treatment to implement the requirements of the Clean Water Act back in the 1970's. It was clear that the urban solution of constructing wastewater treatment plants would not work in rural areas of New Hampshire, where the population is largely served by on-site septic systems and private individual wells. To address this scenario, planners and soil scientists in Rockingham County developed a model subdivision regulation that prescribed lot sizes by soil type. The intent was to assure that the area of house lots was adequate to accommodate a potable drinking water supply and wastewater treatment through septic systems located on-site.

Background

Soil based lot sizing is based on the capabilities of the soil to assimilate nitrate loading from septic systems. The goal is to provide nitrate levels in groundwater at drinking water quality. This concept has been adopted by the state in the form of their administrative rules for subsurface wastewater disposal systems. Many New Hampshire municipalities have also accepted and successfully implemented the concept of soil based lot sizing by adopting area requirements according to soil type in their local subdivision regulations.

The intensity of land development that has occurred in New Hampshire since the 1980's accentuated the need for site specific soils information for use by land use decision makers. To address this need, the Society of Soil Scientists of Northern New England (SSSNNE) developed High Intensity Soil Maps for New Hampshire, Standards SSSNNE Special Publication No. 1 in 1987. The resulting HISS standards provide uniform criteria for soil maps that can be used to interpret lot size by soil type ordinances. They can also be used to interpret local subdivision regulations that have set back requirements for leach fields, limiting soil conditions and hydric soils. HISS requires documentation of four of the soil physical properties that are most limiting to use and management of the landscape. These are drainage class, parent material, restrictive features and slope class.

As the value of using site specific soils information gained widespread recognition, local planning boards began to require HISS maps to make land use decisions that went beyond their intended purposes. There is no direct conversion between the USDA/NRCS soils series classification/interpretations and a soil map symbol derived from the HISS Key To Soil Types. To resolve this potential conflict and to provide soil mapping standards that are consistent with USDA standards and DES subsurface permitting requirements SSSNNE sponsored SSSNNE Special Publication No. 3 Site-Specific Soil Mapping Standards for New Hampshire and Vermont (Version 2.0, January 1999).

The increased use of soils information in state and local regulatory processes and in the popularity of soil based lot size regulations gave rise to the need for technical documentation to support these requirements. The need for public education about the role that soil properties and principles play in the lot size determinations was also evidenced by the common practice of planning boards arbitrarily changing the lot sizes from those presented in the original soil based lot size table. An Ad Hoc Soil Based Lot Size Committee was formed to assess the situation and prepare a document to summarize the technical background and present a model regulation that could be used by municipalities on a statewide basis to promote regulatory consistency. The committee's efforts resulted in the document entitled Environmental Planning for on-site Wastewater Treatment in New Hampshire: Technical Report of the Ad Hoc Committee for Soil-Based Lot Size, NH DES and Rockingham County Conservation District, June 1991 and subsequent work sessions to update that document to meet current technical and scientific standards. Further detail about these efforts are presented in the Historic Prospective section of this document.

Current Status

On January 17th, 2003, the full membership meeting of the Society of Soil Scientists of Northern New England (SSSNNE) voted to develop and publish a report on the most current, technical and scientific information available on soil based lot sizes. This resulting report provides the most recent update of the work of the Ad Hoc Committee for Soil-Based Lot Size, a model lot size by soil type regulation and two tables that provide lot sizes for soil maps prepared using either the Site-Specific Soil Mapping Standards for New Hampshire and Vermont (SSSNNE Special Publication No. 3) or the High Intensity Soil Maps for New Hampshire, Standards (SSSNNE Special Publication No. 1). It is intended that the planning board will adopt either the SSSMS Table or the HISS Table if they choose to adopt and implement the model lot size by soil type regulation.

On August 22, 2003, the full membership meeting of the Society of Soil Scientists of Northern New England reviewed and approved this document for publication and release by unanimous vote. This document, Soil Based Lot Sizing Environmental Planning for On-Site Wastewater Treatment in New Hampshire SSSNNE Special Publication No. 4, Version I, September, 2003 supercedes all previous soil based lot size documents and replaces all previously developed interpretive lot size tables. It is endorsed by the Society of Soil Scientists of Northern New England with pending endorsements from the New Hampshire Office of State Planning and Energy Programs, and the New Hampshire Department of Environmental Services..

The Society provides this publication as a service to the general public. It was formatted for use by Planning Boards, Conservation Commissions, Planners, Engineers, Surveyors, Soil Scientists, Wetland Scientists, and others as a tool for protection of ground water resources. Neither the Society nor any of its members received any financial benefit from the preparation of this publication. It was strictly a volunteer effort by members of the Society to provide the general public with the best available information on lot sizing by soil types.

The Society of Soil Scientists of Northern New England is a non-profit organization of soil scientists, from both the private sector and the public sector, that is dedicated to the advancement of soil science. The Society fosters the profession of soil classification, mapping and interpretation, and encourages the dissemination of information concerning soil science.

With the intent of contributing to the general human welfare, the Society seeks to educate the public on the wise use of soils and the associated natural resources. The Society has two other current publications besides this one: SSSNNE Special Publication No. 1 High Intensity Soil Maps for New Hampshire, Standards (last revision July 16, 2002), and SSSNNE Special Publication No. 3 Site-Specific Soil Mapping Standards for New Hampshire and Vermont .

The Society approved the creation of a Soil-based Lot Size Committee to develop this publication. Members of the Society that formed the Committee are as follows:

Allain, David, Private Soils Consultant
Balcius, Cynthia, Private Soils Consultant
Bond, Richard, Private Soils Consultant
Cuomo, Michael, Private Soils Consultant
Gove, James (Chair), Private Soils Consultant
Hundley, Steven, Soil Scientist, USDA, Natural Resources Conservation Service
Jacobs, Mark, Private Soils Consultant
Latawiec, Francesca, Private Soils Consultant
Lobdell, Raymond, Private Soils Consultant
Morse, Lawrence, Private Soils Consultant
Pilgrim, Sidney, Adjunct Professor, University of New Hampshire

Other non-society attendees of the Committee:

Cassulo, Joanne	NH Office of State Planning and Energy Programs
Steve Whitman	NH Office of State Planning and Energy Programs
Evans, William	NH Department of Environmental Services
Greenwood, Glenn	Rockingham Planning Commission

Other contributing authors (affiliations at time of contribution):

Shope, Steven	Private Geohydrologist
Williams, Paul	Private Geohydrologist

II. Historic Perspective

The original effort to provide detailed technical documentation to support standards for construction, siting and lot sizing for on-site septic systems resulted in a report entitled Environmental Planning for on-site Wastewater Treatment in New Hampshire: Technical Report of the Ad Hoc Committee for Soil-Based Lot Size, NH DES and Rockingham County Conservation District, June 1991. The stated purpose of this report and the model soil-based lot size regulation developed to implement it are as follows:

“To provide the technical basis and standards for lot sizing for on-site septic systems, while maintaining an acceptable level of groundwater and surface water quality.”

A literature review of the current scientific research available at the time was summarized in the aforementioned document. In general, the committee used a mass balance, nitrogen computer model to generate optimal density requirements for subdivisions. They found that nitrogen, in the form of nitrates, is the major contaminant factor in the sizing of lots for groundwater protection. The primary mechanism of nitrate nitrogen reduction in groundwater is dilution, achieved by recharge to groundwater from precipitation.

The amount of recharge is primarily dependent upon a combination of the amount of rainfall and the capability of the soil to infiltrate, transmit and store this water. Soil features such as texture, restrictive layers, structure, consistence and slope are key physical properties that affect groundwater recharge. For the purpose of the committee’s work, nitrate loading was considered to be the most limiting factor, with other constituents in wastewater adequately treated through modern regulatory septic system design and setback requirements.

Based upon these premises, the Ad Hoc Committee utilized a computer model developed by the National Association of Home Builders (NAHB) that considers various aspects of the above factors to calculate recommended lot sizes to maintain the EPA drinking water standard for nitrate nitrogen of 10 mg/L in the groundwater. The factors that were used in the computer model are detailed in Chapter 6 of the Ad Hoc Committee’s technical report published in 1991, and the original lot sizes generated are presented in tables in the model regulation in Volume II of that report. Both the report and the model regulation were widely distributed and used for planning and regulatory purposes by municipalities in New Hampshire. The lot size tables in the 1991 report have been updated and replaced with the tables published in this document.

A. Reasons for Update to the Original Soil-Based Lot Size Model

Since 1991, DES Subsurface Bureau has been working on a series of changes to their Administrative Rules for Subdivision and Individual Sewage Disposal System Design Rules, Env-Ws 1000. They formed a technical committee to assist with the rulemaking, with representatives from the DES Water Council, Granite State Designers and Installers (GSDI), private soil and wetland consultants, the Wetlands Bureau, OSP and the Natural Resources Conservation Service (NRCS).

One major issue identified by the rules committee was the current discrepancies between lot sizes required by DES' rules, those presented in Volume II of the Ad Hoc Committee's report and those adopted by municipalities relative to on-site wastewater treatment. It was a consensus of the group that all parties involved in the lot size by soil type issue should be supporting technically valid standards that are consistent across the state.

Based upon the current census data (year 2000), the figure of 3.6 people per household covers typically every single family residence in New Hampshire. This was the figure that was used in the calculation of the lot sizes in this document.

In 1991 the Ad Hoc Committee, for lack of a better method, used NRCS hydrologic groups as an indicator of soil recharge capability. This was a positive first step; however, hydrologic groups are an engineering interpretation used to place soils into four general categories according to their infiltration capacity and potential for contributing to surface runoff. While it is a valuable tool to assist in determining flooding potential within watersheds, it is not practical to apply these groupings on small parcels of land or in site specific applications. Additionally, because hydrologic group is an engineering interpretation, it is not possible to document observable and measurable soil characteristics in the field. Without the ability to provide measurable values, it becomes very difficult to apply lot size criteria consistently and it is difficult to enforce.

The Ad Hoc Committee on Soil-Based Lot Size reconvened in December of 1999 to update the original soil-based lot sizes using current census data and to reflect more detailed evaluation of physical soil properties, particularly transmissivity, and how they affect groundwater recharge from rainfall on an annual basis. Technical work was performed but no publication was issued. This initiative lost momentum for about a 2-year period before it resumed with renewed interest from the Society of Soil Scientists of Northern New England at their full membership meeting on January 17, 2003. The 2000 census data was reviewed, and found to be consistent with the calculations that were prepared in 1999.

B. Soil Physical Properties

The NRCS National Cooperative Soil Survey has established uniform, nationally accepted, scientific criteria for describing and interpreting a wide range of soil physical and chemical properties. Most of these properties are observable and measurable and can be documented and evaluated by qualified individuals directly in the field. For this reason, they are used to evaluate the suitability of different soil types for subsurface wastewater treatment in New Hampshire.

Both physical and chemical properties influence the soil's ability to function as a filtering medium for wastewater treatment. For the purpose of soil-based lot sizing, the NRCS sorted the soil types that occur in New Hampshire into six categories based upon their established physical properties. Each of these soil categories has a different capability to treat wastewater from septic systems. Using nitrate nitrogen as the contaminant of concern, the ability of any given soil to contribute recharge to groundwater is the primary characteristic of the soil that was considered in developing the categories. Five physical soil properties were considered in determining recharge capability. These properties can be distinctly recognized, measured, and documented in the field by soil series in accordance with

established interpretive limits. The definition and interpretive limits of soil physical properties have been established by the NRCS and are detailed in the document entitled Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January 1999.

The soil physical properties considered in the Ad Hoc Committee's work are as follows:

Depth to seasonal high water table

Depth to bedrock

Depth to hard pan (dense basal till)

Surface texture and infiltration rate of the surface layer

Saturated hydraulic conductivity (permeability) of the substratum

The soils in New Hampshire were grouped into 6 categories according to these soil properties. The 6 categories are defined here in general terms with the technical definition in parentheses. Note that these categories of soils are different from the soil-based lot size table from DES' New Hampshire Code of Administrative Rules Env-Ws 1000. The updated soil categories are as follows:

Category 1: Rapidly permeable soils formed in sands and gravels that provide the greatest amount of groundwater recharge.

(Excessively drained and somewhat excessively drained soils with a rapidly or very rapidly permeable subsoil and substratum.)

Category 2: Moderately permeable, upland soils with no restrictive features, that provide a high amount of groundwater recharge.

(Well drained soils with moderately permeable surface and subsoil layers and having a moderate to rapidly permeable substratum.)

Category 3: Soils that have a moderately deep restrictive feature (high water table, dense material, or bedrock) that restricts the soil's ability to provide groundwater recharge.

(Moderately well drained soils with a moderate to rapidly permeable subsoil, and well drained soils with a slowly or very slowly permeable substratum including soils that are moderately deep to bedrock.)

Category 4: Soils that have a shallow restrictive feature (high water table, dense material, or bedrock) close enough to the soil surface to severely restrict the soil's ability to provide groundwater recharge.

(Somewhat poorly drained soils with a moderate to rapidly permeable subsoil, including soils that are shallow to bedrock.)

Category 5: Poorly drained soils that have a seasonal high water table at or near the surface for a significant period of time such that surface runoff is high and groundwater recharge is minimal.

(Poorly drained soils having a moderate to rapidly permeable subsoil and moderately well drained to somewhat poorly drained soils with a slowly to very slowly permeable subsoil.)

Category 6: Very poorly drained soils, and some poorly drained soils, that contribute a negligible amount of groundwater recharge and are not considered in the lot size calculations.

(Very poorly drained soils and poorly drained soils with a slowly or very slowly permeable subsoil.)

- Note that the soil mapping standards referenced here are the same standards recommended in the two documents, Data Requirements for Site Review: Guidance for Planning Boards DES and OSP, 1999 and Model Requirements for Soils and Wetlands Data in Subdivision [Site Plan Review] Regulations OSP, 1999. However, the soil types identified in the SSSNNE Special Publication No. 1, High Intensity Soil Maps for New Hampshire, Standards, can also be used to identify minimum lot size based on selected soil properties. Both forms of soil mapping are endorsed by the Society of Soil Scientists of Northern New England.

C. Estimated Groundwater Recharge

Groundwater recharge is dependent on numerous factors, the most important of which are precipitation, soil type and slope. Highly permeable soils with flat slopes convert most of the precipitation to groundwater recharge, leaving very little surface water runoff. Conversely, soils with a steep slope and relatively low permeability produce high volumes of surface water runoff with little water remaining to recharge the groundwater. Soils with a shallow depth to the seasonal high water table have a low potential for groundwater recharge, due to diminished storage capacity during the time of year when the majority of the rainfall occurs.

Groundwater recharge in New Hampshire is estimated to range from 0 to 18 inches per year, depending upon various factors including evapotranspiration, uptake by vegetation, soil permeability and the slope of the terrain. Permeability affects the soil's ability to transmit water and slope controls the degree of runoff.

For the purpose of the committee's work, the four hydrologic groups utilized in the original Ad Hoc Committee report were abandoned and specific observable and measurable soil properties were used to establish the six soil categories described in the previous section. Table I is a matrix showing the six categories with four slope categories and the associated annual recharge value that has been assigned by professional hydrogeologists for the purpose of the committee's work. Recharge rates are based upon values presented by the U.S. Geological Survey in their Stratified-Drift Aquifer series of publications for New Hampshire.

- Soils in Category 1 are coarse-grained stratified-drift deposits that have the highest potential for groundwater recharge. These soils are assigned recharge values ranging from 18 to 12 inches per year, depending upon slope.
- Soils in Category 2 are finer-grained stratified-drift, water deposited fine sands, and sandy glacial till that have a moderate permeability and a lower potential for groundwater recharge than Category 1. These soils are assigned recharge values ranging from 14 to 8 inches per year, depending upon slope.
- Soils in Category 3 are similar to the parent materials of Category 2, but which have a moderately deep (between 20 and 40 inches) restrictive feature such as hardpan, high water table, or bedrock. These soils are assigned recharge values ranging from 10 to 7 inches per year. These values are

somewhat lower than Category 2 values to reflect the reduced capacity of the soil due to the moderately deep restrictive features.

- Soils in Category 4 are characterized by a shallow (less than 20 inches) restrictive feature such as high water table, shallow hardpan or bedrock. These soils are assigned recharge values ranging from 7 to 4 inches per year, given the shallow restrictive feature, which will severely restrict the soil's ability to provide recharge.
- Soils in Category 5 poorly drained soils with a low potential for groundwater recharge due to the water table being near or at the ground surface during periods of seasonal high recharge. These soils are assigned recharge values ranging from 5 to 2 inches per year, depending upon slope.
- Soils in Category 6 are very poorly drained soils that contribute a negligible amount of groundwater recharge, and are assigned a value of 0 inches.

Table I

**Estimated Groundwater Recharge
Inches Per Year**

Soil Category	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Slope						
0 - 8%	18"	14"	10"	7"	5"	0"
8 - 15%	16"	12"	9"	6"	4"	0"
15 - 25%	14"	10"	8"	5"	3"	0"
25 - 35%	12"	8"	7"	4"	2"	0"

Source: Shope and Williams, 2000

D. Computer Modeling of Lot Sizes

A computer program prepared by the NAHB, detailed in Chapter 6 of the Ad Hoc Committee's technical report, was used to recalculate lot sizes. The original 16 factors considered in the report entitled Environmental Planning for on-site Wastewater Treatment in New Hampshire: Technical Report of the Ad Hoc Committee for Soil-Based Lot Size, NH DES and Rockingham County Conservation District, June 1991 were used, substituting the updated "natural recharge" rates contained in Table 1 and 3.6 persons per home, which covers virtually all of the residences in NH, based upon 2000 census data.

The lot sizes generated using the NAHB model range from 31,750 square feet to 132,000 square feet. These recommended lot sizes have been incorporated into the model regulation, which follows this chapter. The tables, which show the lot sizes by soil series and identify which series are in which soil groupings accompany the model regulation.

This model regulation supercedes the model regulation presented in Volume II of the original Ad Hoc Committee report. This publication and the original Ad Hoc Committee's 1991 report serve as the technical documentation for the model regulation. The lot sizes determined for the model regulation are presented here in Table II.

Table II
Soil-Based Lot Size Table
In Square Feet

Soil Category	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
Slope						
0 - 8%	31,750	40,000	54,500	77,000	106,000	N/A
8 - 15%	35,250	46,000	60,500	89,000	132,000	N/A
15 - 25%	40,000	54,500	67,500	106,000	N/A	N/A
25 - 35%	46,000	67,500	77,000	132,000	N/A	N/A

Source: Gove and Hundley, 2000

III. Model Lot Size by Soil Type Regulation

The model regulation is configured below such that the wording of the regulation is in the left column and explanatory comments are located in the right column.

1. PURPOSE

Whereas, the local legislative body of the Town of _____ has established a minimum lot size in its municipal zoning regulation in accordance with RSA 674:16, 1(b):

The Planning Board of the Town of _____, New Hampshire hereby adopts the following as part of their subdivision regulations in accordance with RSA 674:35-36 for the following purposes:

To assure that the land indicated on plans submitted to the planning board shall be of such character that it can be used for the building purposes proposed without danger to health;

To prescribe minimum areas of lots so as to assure conformance with local zoning regulations and to assure such additional areas as may be needed for each lot for on-site sanitary facilities; and

To protect ground water quality for purposes of public health and safety.

COMMENTS

This model regulation is largely based on Environmental Planning for Onsite Wastewater Treatment in New Hampshire. Technical Report Volume I. DES and RCCD, June 1991 and the SSSNNE Special Publication No. 1 update to that document. The minimum lot sizes established in those documents are contained in

This section describes the purpose of this regulation, which is to establish lot sizes by soil type to assure groundwater protection and adequate area for on-site wastewater treatment in unsewered areas. Public involvement in groundwater protection is justified where there is a clearly defined public health benefit.

2. DEFINITIONS

As used in this regulation, the following terms shall have the following meaning unless the context clearly indicates otherwise:

- (a) Certified Soil Scientist: A person qualified in soil classification and mapping and certified by the State of New Hampshire Board of Natural Scientists.
- (b) Certified Wetland Scientist: A person qualified in the practice of wetland science and certified by the State of New Hampshire Board of Natural Scientists.
- (c) Municipal Wastewater System: A wastewater collection, treatment, and disposal system that is owned and operated by a municipality.
- (d) Slope: The average steepness of the land surface under consideration. For the purpose of determining lot size categories, Natural Resource Conservation Service slope ranges shall be used. Slope shall be determined by the preparation of a topographic plan or by on site measurement through the use of a clinometer.
- (e) Soil Carrying Capacity: The lot size is calculated by dividing the given area of each soil type by the required area for that soil type found in Appendix 1.
- (f) Soil Type: As identified by High Intensity Soil Maps for New Hampshire, SSSNNE Special Publication Number One (as amended) or Site Specific Soil Mapping Standards for New Hampshire and Vermont, SSSNNE Special Publication Number Three (as amended).

In New Hampshire, soil maps (except those prepared by employees of a federal agency) must be prepared by a soil scientist who is certified by the State of New Hampshire Board of Natural Scientists (RSA 310-A).

In New Hampshire, wetland scientists are certified by the State of New Hampshire Board of Natural Scientists (RSA 310-A).

Percent slope is the vertical distance divided by horizontal distance and then multiplied by 100. A 20 percent slope is a drop of 20 feet in elevation in a horizontal distance of 100 feet. The following slope groups will be used in the administration of this regulation:

0-3% & 3-8% = A&B;
8-15% = C;
15-25% = D; and
>25% = E.

Each soil is assigned a lot size in square feet (Appendix 1) based on its characteristics

The municipality must choose one of these methods and omit the other from the regulation.

(g) Wetlands: Land with the presence of hydric soils, a predominance of hydrophytic vegetation and indicators of wetland hydrology as defined by the Field Indicators for Identifying Hydric Soils in New England, New England Interstate Water Pollution Control Commission (as amended) and the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, Environmental Laboratory, Department of the Army, 1987.

For an area to be characterized as a wetland according to both federal and state regulations, the area must meet these criteria.

3. MINIMUM LOT SIZES

In the absence of a municipal wastewater system, minimum lot sizes within all subdivisions shall meet the following area requirements to insure groundwater quality protection. These requirements are specified in Table SSSMS or Table HISS . Each lot shall have a soil carrying capacity of one or greater. The applicant shall submit calculations, which document the soil carrying capacity for each lot.

This requirement is subject to the following modifications:

- (a) Where more than one soil type is found on a site, a soil carrying capacity of those soils occurring on the lot shall be used to determine the minimum lot size.
- (b) Wetlands may be used as a part of the computed lot size according to the following:
 - (1) Areas designated as poorly drained soils may be utilized to fulfill the minimum lot size required by town regulations and subdivision regulations provided that there is a contiguous non-wetland area of sufficient size and configuration to adequately accommodate all housing and required utilities such as wastewater treatment, water supply and setbacks.

A computer program prepared by the National Association of Home Builders (NAHB) National Research Center was used to determine lot sizes. Sixteen factors relative to soils, slopes and recharge rates were analyzed to yield dimensional requirements based upon allowable nitrate nitrogen loading rates. The actual design and placement of the septic systems must also meet the requirements of Env-Ws 1000.

Example calculations are given at the end of the table.

An area of at least 20,000 square feet of contiguous non-wetland area is recommended for development of non-sewered lots, exclusive of setback requirements.

Poorly drained soils are included in the calculation for lot size by soil type because they have some capacity to provide recharge. Groundwater recharge is one of the key factors in the NAHB model used to determine the area requirements.

(2) Areas designated as very poorly drained soils, fresh or saltwater marsh or surface water areas may not be utilized to fulfill minimum lot size.

(3) All subsurface wastewater disposal systems shall meet state and local setback requirements from poorly and very poorly drained soils.

(c) Minimum lot sizes for residential developments with greater than four bedrooms per building and for cluster developments shall be determined as follows:

No. of one and two bedroom units = Area of each soil type on the lot divided by (lot size from Table 1 or 2 X .60).

No. of three bedroom units = Area of each soil type on the lot divided by (lot size from Table 1 or 2 X .83).

(2) In the case of cluster subdivisions, the overall density of lots or dwelling units for development within the parcel shall be determined by using Table 1 or 2 and computing a soil carrying capacity for the entire parcel. Poorly drained wetland soils will be given credit up to the number of acres of the non-wetland portion of the property.

(3) For duplex use, where the total number of bedrooms in the building shall not exceed five, the lot size shall be increased by 40% of the minimum lot size as determined by Table SSSMS or Table HISS.

An exception to the above is that the poorly drained soils developed in marine sediments have no recharge capacity of significance and are assigned zero recharge value.

Very poorly drained soils are not included in the lot size calculations because they do not contribute significantly to groundwater recharge.

Single family homes with five or more bedrooms had an average of 3.6 persons residing in them (2000 Census).

For multi-family units, the one and two bedroom units were occupied by an average of 2.18 persons and the three bedroom units by 2.99 persons. Based on this, the Ad Hoc Committee allowed a reduction in lot size for multi-family units. For one and two bedrooms units a 40% reduction was allowed, with a 17% reduction for three bedroom units.

4. SOURCE OF SOILS INFORMATION

- (a) Soils information shall be provided in accordance with Site Specific Soil Mapping Standards for New Hampshire and Vermont, Society of Soil Scientists of Northern New England SSSNNE Special Publication No.3 (as amended) or High Intensity Soil Maps for New Hampshire, SSSNNE Special Publication Number 1 (as amended).

- (b) Maps are prepared by field examination and stamped by a Certified Soil Scientist.

- (c) All costs of preparing soil data shall be borne by the applicant.

Application of this regulation requires accurate, detailed soil information. There are two possible sources of suitable soils information: Site Specific Soil Mapping Standards for New Hampshire and Vermont, Society of Soil Scientists of Northern New England SSSNNE Special Publication No.3, (as amended), or High Intensity Soil Mapping for New Hampshire, Standards, SSSNNE Special Publication, No. 1, (as amended). The municipality shall choose one and omit reference to the other.

5. RELATIONSHIP BETWEEN STATE AND LOCAL REGULATIONS

Where both the State and the municipality have existing requirements the more stringent shall govern.

6. ENFORCEMENT PROCEDURES

Shall be in accordance with RSA 673:17, RSA 676.15 et seq.

These are the enforcement procedures spelled out in the planning and land use statutes.

7. SAVING CLAUSE

Where any provision of this regulation is found to be unenforceable it shall be considered savable and shall not be construed to invalidate the remainder of the regulation.

8. EFFECTIVE DATE

This regulation shall be effective upon adoption by a majority vote of the planning board on _____(date) and filing with the municipal clerk on _____(date).

These adoption and filing requirements are consistent with current site plan and subdivision procedures.

IV. Soil Categories for Establishing Lot Size Based on the Site Specific Soil Mapping Standards for New Hampshire and Vermont

A. Introduction

As described in previous sections of this document, the scientific rationale for determining lot size, is based, in part, on the soil's ability to absorb precipitation and subsequently dilute nitrates generated from septic systems to an acceptable level so as to protect ground water quality. The soil categories identify specific soil physical properties and internal conditions that influence the soil's ability to provide recharge to groundwater aquifers. The soil properties are observable and measurable. All soil terminology, description of soil features, and protocols for their recognition and measurement are in conformance to the standards of the USDA/NRCS National Cooperative Soil Survey¹.

These six categories were established by the Ad Hoc Committee for Soil Based Lot Size in April of 2000. The tables were updated in March of 2003 to reflect the latest revisions in the USDA/NRCS Statewide Numerical Soils Legend. These six categories do not correlate with the six soil groups previously recognized in the chapter: ENV-Ws 1000 of NHDES Administrative Rules and no attempt should be made to compare lot sizes between the old soil groups and the newly established soil categories. This is particularly true with the Category 4 soils. The somewhat poorly drained soils in this category had previously been grouped with the poorly drained soils that are more restrictive in lot size requirements. Also, the soils that are shallow to bedrock were separated from the soils that are moderately deep to bedrock and the moderately deep soils were relocated to a less restrictive category. Most of these soils represent new concepts not previously recognized by the National Cooperative Soil Survey in New Hampshire or by DES in their lot size regulations. The additional soil feature of slope is taken into consideration in a second step in calculating soil-based lot size and is presented in the tabular section of this document.

B. Category Definitions

The six soil categories are described in lay terms as follows:

- **Category 1:** Rapidly permeable soils formed in sands and gravels that provide the greatest amount of groundwater recharge.
- **Category 2:** Moderately permeable upland soils with no restrictive features that provide a high amount of groundwater recharge.
- **Category 3:** Soils that have a moderately deep restrictive feature (high water table, dense material, or bedrock) that restricts the soil's ability to provide groundwater recharge.
- **Category 4:** Soils that have a shallow restrictive feature (high water table, dense material, or bedrock) close enough to the soil surface to severely restrict the soil's ability to provide groundwater recharge.
- **Category 5:** Poorly drained hydric soils that have a seasonal high water table at or near the surface for a significant period of time such that surface runoff is high and contribution to the groundwater aquifer is minimal.

- **Category 6:** Very poorly drained hydric soils and some poorly drained soils that contribute a negligible amount of recharge to the groundwater aquifer are not considered in the lot size calculations.

The technical definition of these soil categories is provided on the following pages and is based on specific and measurable soil physical properties. All soils identified within a specific category can be “characterized” as having the physical properties defined for that category. It is important to note that mapping concepts and interpretive limits for soil series recognized by the USDA/NRCS National Cooperative Soil Survey vary in soil properties so as to not always fit perfectly into one of the 6 categories identified in these tables. In such cases the soil scientist making the map chooses the soil series that best fits the landscape.

The current site-specific soil mapping standards recognize eleven distinct map units used for identifying areas of soils altered or disturbed by human influence. The definition of disturbed map units is intentionally brief and vague. Generalized classification allows for a wide range in soil properties and behavioral characteristics. The variability in soil properties typically require on-site investigations before a minimum lot size can be determined. Because lot sizes are determined according to observable and measurable physical properties, it is possible for a professional soil scientist to evaluate these soil properties and make an accurate category placement and subsequent minimum lot size determination. The soil scientist evaluating the disturbed site is expected to provide information on the nature and properties of the soil that were used to determine category placement.

Note:

- 1) On site investigations are always necessary when siting subsurface waste disposal systems.
- 2) For problem soils, or questions concerning soil physical properties and behavioral characteristics, consult the Natural Resources Conservation Service, or the local conservation district office for a complete soil description and range in interpretations.

Below are two separate sections. The first section identifies the technical definition of the soil categories and lists the soils that meet the definition criteria. The second section is further divided into two parts. The first part, organized by soil category, identifies each soil map unit recognized in the NRCS State-Wide Numerical Soils Legend and supplies the lot size (in square feet), based on percent slope. The second part of the second section provides the same lot size information arranged in alphabetical order according to soil type.

C. Category Definitions and Listing of Soil Series Meeting the Defined Category Criteria

Category 1

Excessively drained¹ and somewhat excessively drained² soils with a rapidly³ or very rapidly⁴ permeable subsoil¹⁹ and substratum⁵.

Adams	Hermon	Suncook ¹⁵
Boscawen	Hinckley	Sunday ¹⁵
Ceasar	Hoosic	Redstone
Champlain	Masardis	Warwick
Colton	Merrimac	Windsor
Gloucester	Quonset	Windsor Variant
Glover	Success	

Category 2

Well drained⁶ soils with moderately permeable⁷ surface and subsoil¹⁹ layers and having a moderate⁷ to rapidly permeable³ substratum⁵.

Abenaki ¹⁵	Dutchess	Occum ¹⁵
Agawam	Fryeburg ¹⁵	Ondawa ¹⁵
Allagash	Groveton	Ondawa Variant ¹⁵
Bangor	Hadley ¹⁵	Salmon
Berkshire	Hartland	Salmon Variant
Bice	Haven	Stetson ¹⁶
Canton	Houghtonville	Unidilla
Charlton	Lombard	
Chichester	Monadnock	

Category 3

Moderately well drained¹⁰ soils with a moderate⁷ to rapidly permeable³ subsoil¹⁹, and well drained⁶ soils with a slowly¹¹ or very slowly permeable¹² substratum⁵; including soils that are moderately deep²⁰ to bedrock.

Acton	Hitchcock	Plaisted Variant
Acton Variant	Howland	Podunk ¹⁵
Ashfield	Lanesboro	Podunk Variant ¹⁵
Becket	Lovewell ¹⁵	Poocham
Belgrade	Machais	Pootatuck ¹⁵
Bernardston	Macomber ¹⁷	Rawsonville ¹⁷
Bernardston Variant	Madawaska ¹⁶	Scio
Buckland	Marlow	Scituate
Chatfield ¹⁷	Melrose	Shapleigh ¹⁷
Canterbury	Metacomet	Sheepscot
Cardigan ¹⁷	Metallak ¹⁵	Sisk
Chesuncook	Millis	Skerry
Croghan	Millsite ¹⁷	Stratton ¹⁷
Dartmouth	Montauk	Sudbury ¹⁶
Deerfield	Mundal	Suffield
Dixfield	Newfields	Sunapee
Dixmont ¹⁶	Nicholville	Sutton
Duane	Nicholville Variant	Surplus ¹⁶
Eldridge	Ninigret	Tunbridge ¹⁷
Elliotsville ¹⁷	Paxton	Waumbek
Elmridge	Pennichuck ¹⁷	Winnecook ¹⁷
Elmwood	Peru	Winooski ¹⁵
Fullum	Pittstown	Woodbridge
Glebe ¹⁷	Pittstown Variant	
Henniker	Plaisted	

Category 4

Somewhat poorly drained⁹ soils with a moderate⁷ to rapidly permeable³ subsoil¹⁹, including soils that are shallow²¹ to bedrock.

Canaan ⁸	Lyman ⁸	Scio variant
Chatfield Variant ¹⁷	Madawaska ¹⁶	Surplus ¹⁶
Colonel	Monson ⁸	Telos
Colonel Variant ¹⁷	Moosilauke ¹⁶	Thorndike ⁸
Croghan Variant	Newfields Variant	Shaker Variant
Deerfield Variant	Ninigret Variant	Sudbury ¹⁶
Dixmont ¹⁶	Pittstown Variant	Sunapee Variant
Duane Variant	Podunk Variant ¹⁵	Sutton Variant
Eldridge Variant	Pootatuck Variant ¹⁵	Swanton ¹⁶
Finch	Raynham ¹⁶	Westminster ⁸
Hogback ⁸	Ricker ⁸	Woodstock ⁸
Hollis ^{8,16}	Roundabout ¹⁶	
Kearsarge ⁸	Saddleback ⁸	

Category 5

Poorly drained soils¹³ having a moderate⁷ to rapidly permeable³ subsoil¹⁹ and moderately well drained¹⁰ to somewhat poorly drained⁹ soils with a slowly¹¹ to very slowly¹² permeable subsoil¹⁹.

Au Gres	Lim ¹⁵	Raypole
Bemis	Limerick ¹⁵	Ridgebury
Binghamville	Limerick Variant ¹⁵	Rippowam ¹⁵
Boxford ¹⁶	Lyme	Roundabout ¹⁶
Brayton	Monarda	Rumney ¹⁵
Buxton	Moosilauke ¹⁶	Rumney Variant ¹⁵
Cabot	Naumburg ¹⁶	Saugatuck
Charles ¹⁵	Pemi	Shaker
Cohas ¹⁵	Pillsbury ¹⁶	Squamscott
Grange	Pillsbury Variant ¹⁷	Stissing
Kinsman	Pipestone	Swanton
Leicester	Raynham ¹⁶	Walpole
Leicester Variant	Raynham Variant	Warham

Category 6

Very poorly drained soils¹⁴ and poorly drained soils¹³ with a slowly¹¹ or very slowly¹² permeable subsoil¹⁹.

Biddeford	Medomak Variant ¹⁵	Scantic ¹⁸
Borohemists	Medomak ¹⁵	Scitico ¹⁸
Bucksport	Ossipee	Searsport
Burnham	Pawcatuck ¹⁵	Vassalboro
Chocorua	Peacham	Waskish
Greenwood	Pondicherry	Westbrook ¹⁵
Ipswich ¹⁵	Saco ¹⁵	Whitman
Matunuck	Saco Variant ¹⁵	Wonsqueak
Maybid ¹⁵	Scarboro	

D. Category Definitions and Listing of Soil Map Units With Lot Size Assigned to Each Map Unit, in Square Feet, According to Slope.

Category 1

Excessively drained¹ and somewhat excessively drained² soils with a rapidly³ or very rapidly⁴ permeable subsoil¹⁹ and substratum⁵.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
36 236 very stony	Adams	31,750 SF	35,250 SF	40,000 SF	46,000 SF
220	Boscawen	31,750 SF	35,250 SF	40,000 SF	46,000 SF
526	Ceasar	31,750 SF	35,250 SF	40,000 SF	46,000 SF
35	Champlain	31,750 SF	35,250 SF	40,000 SF	46,000 SF
22 220 variant 21 gravelly 222 very stony	Colton	31,750 SF	35,250 SF	40,000 SF	46,000 SF
11 111 very stony 112 extremely stony	Gloucester	31,750 SF	35,250 SF	40,000 SF	46,000 SF
	Glover ²³	31,750 SF	35,250 SF	40,000 SF	46,000 SF
54 245 variant 355 extremely bouldery 65 extremely stony 55 very stony	Hermon	31,750 SF	35,250 SF	40,000 SF	46,000 SF
12 212 gravelly	Hinckley	31,750 SF	35,250 SF	40,000 SF	46,000 SF
510	Hoosic	31,750 SF	35,250 SF	40,000 SF	46,000 SF
23	Masardis	31,750 SF	35,250 SF	40,000 SF	46,000 SF
10	Merrimac	31,750 SF	35,250 SF	40,000 SF	46,000 SF
310	Quonset	31,750 SF	35,250 SF	40,000 SF	46,000 SF
154	Success	31,750 SF	35,250 SF	40,000 SF	46,000

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
156 extremely bouldery 155 very stony					SF
402 freq. Flooded 2 occas. Flooded	Suncook ¹⁵	31,750 SF	35,250 SF	40,000 SF	46,000 SF
202 freq. Flooded 102 occas. flooded	Sunday ¹⁵	31,750 SF	35,250 SF	40,000 SF	46,000 SF
665 very stony	Redstone	31,750 SF	35,250 SF	40,000 SF	46,000 SF
210	Warwick	31,750 SF	35,250 SF	40,000 SF	46,000 SF
26	Windsor	31,750 SF	35,250 SF	40,000 SF	46,000 SF
327	Windsor Variant	31,750 SF	35,250 SF	40,000 SF	46,000 SF

Category 2

Well drained⁶ soils with moderately permeable⁷ surface and subsoil¹⁹ layers and having a moderate⁷ to rapidly permeable³ substratum⁵.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
501	Abenaki ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
24 124 variant	Agawam	40,000 SF	46,000 SF	54,500 SF	67,500 SF
127	Allagash	40,000 SF	46,000 SF	54,500 SF	67,500 SF
572	Bangor	40,000 SF	46,000 SF	54,500 SF	67,500 SF
72 373 extremely bouldery 173 extremely stony 73 very stony	Berkshire	40,000 SF	46,000 SF	54,500 SF	67,500 SF
226	Bice	40,000 SF	46,000 SF	54,500 SF	67,500 SF
42 343 extremely bouldery 243 extremely stony 43 very stony	Canton	40,000 SF	46,000 SF	54,500 SF	67,500 SF
62 163 extremely stony 63 very stony	Charlton	40,000 SF	46,000 SF	54,500 SF	67,500 SF
	Chichester ²²	40,000 SF	46,000 SF	54,500 SF	67,500 SF
366	Dutchess	40,000 SF	46,000 SF	54,500 SF	67,500 SF
208 freq. Flooded 308 occas. flooded	Fryeburg ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
27	Groveton	40,000 SF	46,000 SF	54,500 SF	67,500 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
8 freq. Flooded 108 occas. flooded	Hadley ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
31	Hartland	40,000 SF	46,000 SF	54,500 SF	67,500 SF
410	Haven	40,000 SF	46,000 SF	54,500 SF	67,500 SF
795	Houghtonville	40,000 SF	46,000 SF	54,500 SF	67,500 SF
259	Lombard	40,000 SF	46,000 SF	54,500 SF	67,500 SF
142 442 variant 443 variant, very stony 145 extremely bouldery 144 extremely stony 143 very stony	Monadnock	40,000 SF	46,000 SF	54,500 SF	67,500 SF
1 freq. Flooded 410 occas. flooded	Occum ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
101 freq. Flooded 201 occas. flooded	Ondawa ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
301	Ondawa Variant ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
630	Salmon	40,000 SF	46,000 SF	54,500 SF	67,500 SF
297	Salmon Variant	40,000 SF	46,000 SF	54,500 SF	67,500 SF
523	Stetson ¹⁶	40,000 SF	46,000 SF	54,500 SF	67,500 SF
30 530 variant	Unidilla	40,000 SF	46,000 SF	54,500 SF	67,500 SF

Category 3

Moderately well drained¹⁰ soils with a moderate⁷ to rapidly permeable³ subsoil¹⁹, and well drained⁶ soils with a slowly¹¹ or very slowly permeable¹² substratum⁵; including soils that are moderately deep²⁰ to bedrock.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
146 147 very stony	Acton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
148 149 very stony	Acton Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
	Ashfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
56 157 extremely stony 57 very stony	Becket	54,500 SF	60,500 SF	67,500 SF	77,000 SF
532	Belgrade	54,500 SF	60,500 SF	67,500 SF	77,000 SF
330 331 very stony	Bernardston	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
368 369 very stony	Bernardston Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
237	Buckland	54,500 SF	60,500 SF	67,500 SF	77,000 SF
166 167 very stony	Canterbury ²²	54,500 SF	60,500 SF	67,500 SF	77,000 SF
89 87 very stony	Chatfield ^{16,17}	54,500 SF	60,500 SF	67,500 SF	77,000 SF
357	Cardigan ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
126	Chesuncook	54,500 SF	60,500 SF	67,500 SF	77,000 SF
613	Croghan	54,500 SF	60,500 SF	67,500 SF	77,000 SF
132	Dartmouth	54,500 SF	60,500 SF	67,500 SF	77,000 SF
313	Deerfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
378 379 very stony	Dixfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
578 579 very stony	Dixmont ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
413	Duane	54,500 SF	60,500 SF	67,500 SF	77,000 SF
38	Eldridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF
128	Elliotville ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
238	Elmridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF
338	Elmwood	54,500 SF	60,500 SF	67,500 SF	77,000 SF
	Fullum ²²	54,500 SF	60,500 SF	67,500 SF	77,000 SF
671	Glebe ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
46 47 very stony	Henniker	54,500 SF	60,500 SF	67,500 SF	77,000 SF
130	Hitchcock	54,500 SF	60,500 SF	67,500 SF	77,000 SF
566 567 very stony	Howland	54,500 SF	60,500 SF	67,500 SF	77,000 SF
228	Lanesboro	54,500 SF	60,500 SF	67,500 SF	77,000 SF
307 freq. Flooded 309 rarely flooded	Lovewell ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
520	Machais	54,500 SF	60,500 SF	67,500 SF	77,000 SF
252	Macomber ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
28	Madawaska ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
76 177 extremely stony 77 very stony	Marlow	54,500 SF	60,500 SF	67,500 SF	77,000 SF
37	Melrose	54,500 SF	60,500 SF	67,500 SF	77,000 SF
	Metacomet	54,500 SF	60,500 SF	67,500 SF	77,000 SF
404 freq. Flooded 504 occas. flooded	Metallak ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
39	Millis	54,500 SF	60,500 SF	67,500 SF	77,000 SF
251	Millsite ^{16,17}	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
44 45 very stony	Montauk	54,500 SF	60,500 SF	67,500 SF	77,000 SF
610	Mundal	54,500 SF	60,500 SF	67,500 SF	77,000 SF
444 445 very stony	Newfields	54,500 SF	60,500 SF	67,500 SF	77,000 SF
632	Nicholville	54,500 SF	60,500 SF	67,500 SF	77,000 SF
215	Nicholville Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
513	Ninigret	54,500 SF	60,500 SF	67,500 SF	77,000 SF
66 67 very stony	Paxton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
460	Pennichuck ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
78 79 very stony	Peru	54,500 SF	60,500 SF	67,500 SF	77,000 SF
334 336 very stony	Pittstown	54,500 SF	60,500 SF	67,500 SF	77,000 SF
928	Pittstown Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
563 564 very stony	Plaisted	54,500 SF	60,500 SF	67,500 SF	77,000 SF
104 freq. Flooded 117 occas. flooded	Podunk ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
204 freq. Flooded 207 occas. flooded	Podunk Variant ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
230	Poocham	54,500 SF	60,500 SF	67,500 SF	77,000 SF
304 freq. Flooded 4 occas. Flooded	Pootatuck ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
98	Rawsonville ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
531	Scio	54,500 SF	60,500 SF	67,500 SF	77,000 SF
448 449 very stony	Scituate	54,500 SF	60,500 SF	67,500 SF	77,000 SF
	Shapleigh ^{17, 23}	54,500 SF	60,500 SF	67,500 SF	77,000 SF
14	Sheepscot	54,500 SF	60,500 SF	67,500 SF	77,000 SF
667	Sisk	54,500 SF	60,500 SF	67,500 SF	77,000 SF
558 559 very stony	Skerry	54,500 SF	60,500 SF	67,500 SF	77,000 SF
118	Sudbury ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
536	Suffield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
168 169 very stony	Sunapee	54,500 SF	60,500 SF	67,500 SF	77,000 SF
68 69 very stony	Sutton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
669	Surplus ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
99	Tunbridge ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
58	Waumbek	54,500 SF	60,500 SF	67,500 SF	77,000 SF
88	Winnecook ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
103 freq. Flooded 9 occas. Flooded	Winooski ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
29 129 very stony	Woodbridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF

Category 4

Somewhat poorly drained⁹ soils with a moderate⁷ to rapidly permeable³ subsoil¹⁹, including soils that are shallow²¹ to bedrock.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
663	Canaan ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
289	Chatfield Variant ^{16,17}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
927 947 very stony	Colonel	77,000 SF	89,000 SF	106,000 SF	132,000 SF
960	Colonel Variant ¹⁷	77,000 SF	89,000 SF	106,000 SF	132,000 SF
916	Croghan Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
915	Deerfield Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
929 949 very stony	Dixmont ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
914 910 very stony	Duane Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
943	Eldridge Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
116	Finch	77,000 SF	89,000 SF	106,000 SF	132,000 SF
91	Hogback ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
86 85 very stony	Hollis ^{8,16}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
359	Kearsarge ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
92	Lyman ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
918	Madawaska ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
					SF
133	Monson ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
935 942 very stony	Moosilauke ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
921 941 very stony	Newfields Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
917	Ninigret Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
928	Pittstown Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
975 freq. Flooded 119 occas. Flooded	Podunk Variant ¹⁵	77,000 SF	89,000 SF	106,000 SF	132,000 SF
974 freq. Flooded	Pootatuck Variant ¹⁵	77,000 SF	89,000 SF	106,000 SF	132,000 SF
931	Raynham ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
674	Ricker ^{8,16}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
932	Roundabout ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
673	Saddleback ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
933	Scio variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
993	Surplus ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
123	Telos	77,000 SF	89,000 SF	106,000 SF	132,000 SF
84	Thorndike ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
934	Shaker Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
913	Sudbury ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
925 945 very stony 469 ortstein	Sunapee Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
924	Sutton Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
936	Swanton ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
	Westminster ^{8, 22}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
93 very stony	Woodstock ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF

Category 5

Poorly drained soils¹³ having a moderate⁷ to rapidly permeable³ subsoil¹⁹ and moderately well drained¹⁰ to somewhat poorly drained⁹ soils with a slowly¹¹ to very slowly¹² permeable subsoil¹⁹.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
516 fine sandy loam 615 loamy sand	Au Gres	106,000 SF	132,000 SF	n/a	n/a
224	Bemis	106,000 SF	132,000 SF	n/a	n/a
534	Binghamville	106,000 SF	132,000 SF	n/a	n/a
32 mwd 953 swp	Boxford ¹⁶	106,000 SF	132,000 SF	n/a	n/a
240	Brayton	106,000 SF	132,000 SF	n/a	n/a
232	Buxton	106,000 SF	132,000 SF	n/a	n/a
589 590 very stony	Cabot	106,000 SF	132,000 SF	n/a	n/a
209	Charles ¹⁵	106,000 SF	132,000 SF	n/a	n/a
505	Cohas ¹⁵	106,000 SF	132,000 SF	n/a	n/a
433	Grange ¹⁶	106,000 SF	132,000 SF	n/a	n/a
614	Kinsman	106,000 SF	132,000 SF	n/a	n/a
514 515 very stony	Leicester	106,000 SF	132,000 SF	n/a	n/a
508 509 very stony	Leicester Variant	106,000 SF	132,000 SF	n/a	n/a
3	Lim ¹⁵	106,000 SF	132,000 SF	n/a	n/a
109	Limerick ¹⁵	106,000 SF	132,000 SF	n/a	n/a
409	Limerick Variant ¹⁵	106,000 SF	132,000 SF	n/a	n/a
246	Lyme	106,000 SF	132,000 SF	n/a	n/a
569 570 very stony	Monarda	106,000 SF	132,000 SF	n/a	n/a
414 415 very stony	Moosilauke ¹⁶	106,000 SF	132,000 SF	n/a	n/a
214	Naumburg ¹⁶	106,000 SF	132,000 SF	n/a	n/a
633	Pemi	106,000 SF	132,000 SF	n/a	n/a
646	Pillsbury ¹⁶	106,000 SF	132,000 SF	n/a	n/a

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
647 very stony					
961	Pillsbury Variant ¹⁷	106,000 SF	132,000 SF	n/a	n/a
314	Pipestone	106,000 SF	132,000 SF	n/a	n/a
533	Raynham ¹⁶	106,000 SF	132,000 SF	n/a	n/a
434	Raynham Variant	106,000 SF	132,000 SF	n/a	n/a
540	Raypole	106,000 SF	132,000 SF	n/a	n/a
656	Ridgebury ¹⁶	106,000 SF	132,000 SF	n/a	n/a
657 very stony					
5	Rippowam ¹⁵	106,000 SF	132,000 SF	n/a	n/a
333	Roundabout ¹⁶	106,000 SF	132,000 SF	n/a	n/a
105	Rumney ¹⁵	106,000 SF	132,000 SF	n/a	n/a
205	Rumney Variant ¹⁵	106,000 SF	132,000 SF	n/a	n/a
16	Saugatuck	106,000 SF	132,000 SF	n/a	n/a
439	Shaker	106,000 SF	132,000 SF	n/a	n/a
538	Squamscott	106,000 SF	132,000 SF	n/a	n/a
340	Stissing	106,000 SF	132,000 SF	n/a	n/a
438	Swanton ¹⁶	106,000 SF	132,000 SF	n/a	n/a
546	Walpole	106,000 SF	132,000 SF	n/a	n/a
547 very stony					
34	Warham ¹⁶	106,000 SF	132,000 SF	n/a	n/a

Category 6

Very poorly drained soils¹⁴ and poorly drained soils¹³ with a slowly¹¹ or very slowly¹² permeable subsoil¹⁹.

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
234	Biddeford	n/a	n/a	n/a	n/a
95 nearly level 197 ponded	Borohemists	n/a	n/a	n/a	n/a
895	Bucksport	n/a	n/a	n/a	n/a
131	Burnham	n/a	n/a	n/a	n/a
395	Chocorua	n/a	n/a	n/a	n/a
295	Greenwood	n/a	n/a	n/a	n/a
397 freq. Flooded 997 low salt	Ipswich ¹⁵	n/a	n/a	n/a	n/a
797	Matunuck	n/a	n/a	n/a	n/a
134	Maybid ¹⁵	n/a	n/a	n/a	n/a
206	Medomak Variant ¹⁵	n/a	n/a	n/a	n/a
406	Medomak ¹⁵	n/a	n/a	n/a	n/a
495	Ossipee	n/a	n/a	n/a	n/a
497	Pawcatuck ¹⁵	n/a	n/a	n/a	n/a
549	Peacham	n/a	n/a	n/a	n/a
992	Pondicherry	n/a	n/a	n/a	n/a
6	Saco ¹⁵	n/a	n/a	n/a	n/a
306 106	Saco Variant ¹⁵	n/a	n/a	n/a	n/a
115	Scarboro	n/a	n/a	n/a	n/a
233	Scantic ¹⁸	n/a	n/a	n/a	n/a
33	Scitico ¹⁸	n/a	n/a	n/a	n/a
15	Searsport	n/a	n/a	n/a	n/a
150	Vassalboro	n/a	n/a	n/a	n/a
195	Waskish	n/a	n/a	n/a	n/a
597	Westbrook ¹⁵	n/a	n/a	n/a	n/a
49	Whitman	n/a	n/a	n/a	n/a
995	Wonsqueak	n/a	n/a	n/a	n/a

E. Table SSSMS
Lot Size, Alphabetical, by Soil Series

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
501	Abenaki ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
146 147 very stony	Acton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
148 149 very stony	Acton Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
36 236 very stony	Adams	31,750 SF	35,250 SF	40,000 SF	46,000 SF
24 124 variant	Agawam	40,000 SF	46,000 SF	54,500 SF	67,500 SF
127	Allagash	40,000 SF	46,000 SF	54,500 SF	67,500 SF
	Ashfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
516 fine sandy loam 615 loamy sand	Au Gres	106,000 SF	132,000 SF	n/a	n/a
572	Bangor	40,000 SF	46,000 SF	54,500 SF	67,500 SF
56 157 extremely stony 57 very stony	Becket	54,500 SF	60,500 SF	67,500 SF	77,000 SF
532	Belgrade	54,500 SF	60,500 SF	67,500 SF	77,000 SF
224	Bemis	106,000 SF	132,000 SF	n/a	n/a
72 373 extremely bouldery 173 extremely stony 73 very stony	Berkshire	40,000 SF	46,000 SF	54,500 SF	67,500 SF
330 331 very stony	Bernardston	54,500 SF	60,500 SF	67,500 SF	77,000 SF
368 369 very stony	Bernardston Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
226	Bice	40,000 SF	46,000 SF	54,500 SF	67,500 SF
234	Biddeford	n/a	n/a	n/a	n/a
534	Binghamville	106,000 SF	132,000 SF	n/a	n/a
95 nearly level 197 ponded	Borohemists	n/a	n/a	n/a	n/a

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
220	Boscawen	31,750 SF	35,250 SF	40,000 SF	46,000 SF
32 mwd 953 swp	Boxford ¹⁶	106,000 SF	132,000 SF	n/a	n/a
240	Brayton	106,000 SF	132,000 SF	n/a	n/a
237	Buckland	54,500 SF	60,500 SF	67,500 SF	77,000 SF
895	Bucksport	n/a	n/a	n/a	n/a
131	Burnham	n/a	n/a	n/a	n/a
232	Buxton	106,000 SF	132,000 SF	n/a	n/a
589 590 very stony	Cabot	106,000 SF	132,000 SF	n/a	n/a
663	Canaan ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
166 167 very stony	Canterbury ²²	54,500 SF	60,500 SF	67,500 SF	77,000 SF
42 343 extremely bouldery 243 extremely stony 43 very stony	Canton	40,000 SF	46,000 SF	54,500 SF	67,500 SF
357	Cardigan ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
526	Ceasar	31,750 SF	35,250 SF	40,000 SF	46,000 SF
35	Champlain	31,750 SF	35,250 SF	40,000 SF	46,000 SF
209	Charles ¹⁵	106,000 SF	132,000 SF	n/a	n/a
62 163 extremely stony 63 very stony	Charlton	40,000 SF	46,000 SF	54,500 SF	67,500 SF
289	Chatfield Variant ^{16,17}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
89 87 very stony	Chatfield ^{16,17}	54,500 SF	60,500 SF	67,500 SF	77,000 SF
126	Chesuncook	54,500 SF	60,500 SF	67,500 SF	77,000 SF
	Chichester ²²	40,000 SF	46,000 SF	54,500 SF	67,500 SF
395	Chocorua	n/a	n/a	n/a	n/a
505	Cohas ¹⁵	106,000 SF	132,000 SF	n/a	n/a
927 947 very stony	Colonel	77,000 SF	89,000 SF	106,000 SF	132,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
960	Colonel Variant ¹⁷	77,000 SF	89,000 SF	106,000 SF	132,000 SF
22 220 variant 21 gravelly 222 very stony	Colton	31,750 SF	35,250 SF	40,000 SF	46,000 SF
613	Croghan	54,500 SF	60,500 SF	67,500 SF	77,000 SF
916	Croghan Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
132	Dartmouth	54,500 SF	60,500 SF	67,500 SF	77,000 SF
313	Deerfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
915	Deerfield Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
378 379 very stony	Dixfield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
578 579 very stony	Dixmont ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
929 949 very stony	Dixmont ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
413	Duane	54,500 SF	60,500 SF	67,500 SF	77,000 SF
914 910 very stony	Duane Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
366	Dutchess	40,000 SF	46,000 SF	54,500 SF	67,500 SF
38	Eldridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF
943	Eldridge Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
128	Elliotville ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
238	Elmridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF
338	Elmwood	54,500 SF	60,500 SF	67,500 SF	77,000 SF
116	Finch	77,000 SF	89,000 SF	106,000 SF	132,000 SF
208 freq. flooded 308 occas. flooded	Fryeburg ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
	Fullum ²²	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
671	Glebe ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
11 111 very stony 112 extremely stony	Gloucester	31,750 SF	35,250 SF	40,000 SF	46,000 SF
	Glover ²³	31,750 SF	35,250 SF	40,000 SF	46,000 SF
433	Grange ¹⁶	106,000 SF	132,000 SF	n/a	n/a
295	Greenwood	n/a	n/a	n/a	n/a
27	Groveton	40,000 SF	46,000 SF	54,500 SF	67,500 SF
8 freq. Flooded 108 occas. flooded	Hadley ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
31	Hartland	40,000 SF	46,000 SF	54,500 SF	67,500 SF
410	Haven	40,000 SF	46,000 SF	54,500 SF	67,500 SF
46 47 very stony	Henniker	54,500 SF	60,500 SF	67,500 SF	77,000 SF
54 245 variant 355 extremely bouldery 65 extremely stony 55 very stony	Hermon	31,750 SF	35,250 SF	40,000 SF	46,000 SF
12 212 gravelly	Hinckley	31,750 SF	35,250 SF	40,000 SF	46,000 SF
130	Hitchcock	54,500 SF	60,500 SF	67,500 SF	77,000 SF
91	Hogback ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
86 85 very stony	Hollis ^{8,16}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
510	Hoosic	31,750 SF	35,250 SF	40,000 SF	46,000 SF
795	Houghtonville	40,000 SF	46,000 SF	54,500 SF	67,500 SF
566 567 very stony	Howland	54,500 SF	60,500 SF	67,500 SF	77,000 SF
397 freq. flooded 997 low salt	Ipswich ¹⁵	n/a	n/a	n/a	n/a
359	Kearsarge ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
614	Kinsman	106,000 SF	132,000 SF	n/a	n/a

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
228	Lanesboro	54,500 SF	60,500 SF	67,500 SF	77,000 SF
514 515 very stony	Leicester	106,000 SF	132,000 SF	n/a	n/a
508 509 very stony	Leicester Variant	106,000 SF	132,000 SF	n/a	n/a
3	Lim ¹⁵	106,000 SF	132,000 SF	n/a	n/a
409	Limerick Variant ¹⁵	106,000 SF	132,000 SF	n/a	n/a
109	Limerick ¹⁵	106,000 SF	132,000 SF	n/a	n/a
259	Lombard	40,000 SF	46,000 SF	54,500 SF	67,500 SF
307 freq. flooded 309 rarely flooded	Lovewell ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
92	Lyman ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
246	Lyme	106,000 SF	132,000 SF	n/a	n/a
520	Machais	54,500 SF	60,500 SF	67,500 SF	77,000 SF
252	Macomber ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
28	Madawaska ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
918	Madawaska ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
76 177 extremely stony 77 very stony	Marlow	54,500 SF	60,500 SF	67,500 SF	77,000 SF
23	Masardis	31,750 SF	35,250 SF	40,000 SF	46,000 SF
797	Matunuck	n/a	n/a	n/a	n/a
134	Maybid ¹⁵	n/a	n/a	n/a	n/a
206	Medomak Variant ¹⁵	n/a	n/a	n/a	n/a
406	Medomak ¹⁵	n/a	n/a	n/a	n/a
37	Melrose	54,500 SF	60,500 SF	67,500 SF	77,000 SF
10	Merrimac	31,750 SF	35,250 SF	40,000 SF	46,000 SF
	Metacomet	54,500 SF	60,500 SF	67,500 SF	77,000 SF
404 freq. flooded 504 occas. flooded	Metallak ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
39	Millis	54,500 SF	60,500 SF	67,500 SF	77,000 SF
251	Millsite ^{16,17}	54,500 SF	60,500 SF	67,500 SF	77,000 SF
142 442 variant 443 variant, very stony 145 extremely bouldery 144 extremely stony 143 very stony	Monadnock	40,000 SF	46,000 SF	54,500 SF	67,500 SF
569 570 very stony	Monarda	106,000 SF	132,000 SF	n/a	n/a
133	Monson ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
44 45 very stony	Montauk	54,500 SF	60,500 SF	67,500 SF	77,000 SF
935 942 very stony	Moosilauke ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
414 415 very stony	Moosilauke ¹⁶	106,000 SF	132,000 SF	n/a	n/a
610	Mundal	54,500 SF	60,500 SF	67,500 SF	77,000 SF
214	Naumburg ¹⁶	106,000 SF	132,000 SF	n/a	n/a
444 445 very stony	Newfields	54,500 SF	60,500 SF	67,500 SF	77,000 SF
921 941 very stony	Newfields Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
632	Nicholville	54,500 SF	60,500 SF	67,500 SF	77,000 SF
215	Nicholville Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
513	Ninigret	54,500 SF	60,500 SF	67,500 SF	77,000 SF
917	Ninigret Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
1 freq. Flooded 410 occas. flooded	Occum ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
301	Ondawa Variant ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
101 freq. flooded 201 occas. flooded	Ondawa ¹⁵	40,000 SF	46,000 SF	54,500 SF	67,500 SF
495	Ossipee	n/a	n/a	n/a	n/a
497	Pawcatuck ¹⁵	n/a	n/a	n/a	n/a

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
66 67 very stony	Paxton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
549	Peacham	n/a	n/a	n/a	n/a
633	Pemi	106,000 SF	132,000 SF	n/a	n/a
460	Pennichuck ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
78 79 very stony	Peru	54,500 SF	60,500 SF	67,500 SF	77,000 SF
961	Pillsbury Variant ¹⁷	106,000 SF	132,000 SF	n/a	n/a
646 647 very stony	Pillsbury ¹⁶	106,000 SF	132,000 SF	n/a	n/a
314	Pipestone	106,000 SF	132,000 SF	n/a	n/a
334 336 very stony	Pittstown	54,500 SF	60,500 SF	67,500 SF	77,000 SF
928	Pittstown Variant	54,500 SF	60,500 SF	67,500 SF	77,000 SF
928	Pittstown Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
563 564 very stony	Plaisted	54,500 SF	60,500 SF	67,500 SF	77,000 SF
204 freq. flooded 207 occas. flooded	Podunk Variant ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
975 freq. flooded 119 occas. flooded	Podunk Variant ¹⁵	77,000 SF	89,000 SF	106,000 SF	132,000 SF
104 freq. flooded 117 occas. flooded	Podunk ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
992	Pondicherry	n/a	n/a	n/a	n/a
230	Poocham	54,500 SF	60,500 SF	67,500 SF	77,000 SF
974 freq. flooded	Pootatuck Variant ¹⁵	77,000 SF	89,000 SF	106,000 SF	132,000 SF
304 freq. flooded 4 occas. Flooded	Pootatuck ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
310	Quonset	31,750 SF	35,250 SF	40,000 SF	46,000 SF
98	Rawsonville ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
434	Raynham Variant	106,000 SF	132,000 SF	n/a	n/a
931	Raynham ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
533	Raynham ¹⁶	106,000 SF	132,000 SF	n/a	n/a
540	Raypole	106,000 SF	132,000 SF	n/a	n/a
665 very stony	Redstone	31,750 SF	35,250 SF	40,000 SF	46,000 SF
674	Ricker ^{8,16}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
656 657 very stony	Ridgebury ¹⁶	106,000 SF	132,000 SF	n/a	n/a
5	Rippowam ¹⁵	106,000 SF	132,000 SF	n/a	n/a
932	Roundabout ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
333	Roundabout ¹⁶	106,000 SF	132,000 SF	n/a	n/a
205	Rumney Variant ¹⁵	106,000 SF	132,000 SF	n/a	n/a
105	Rumney ¹⁵	106,000 SF	132,000 SF	n/a	n/a
306 106	Saco Variant ¹⁵	n/a	n/a	n/a	n/a
6	Saco ¹⁵	n/a	n/a	n/a	n/a
673	Saddleback ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
630	Salmon	40,000 SF	46,000 SF	54,500 SF	67,500 SF
297	Salmon Variant	40,000 SF	46,000 SF	54,500 SF	67,500 SF
16	Saugatuck	106,000 SF	132,000 SF	n/a	n/a
233	Scantic ¹⁹	n/a	n/a	n/a	n/a
115	Scarboro	n/a	n/a	n/a	n/a
531	Scio	54,500 SF	60,500 SF	67,500 SF	77,000 SF
933	Scio variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
33	Scitico ¹⁹	n/a	n/a	n/a	n/a
448 449 very stony	Scituate	54,500 SF	60,500 SF	67,500 SF	77,000 SF
15	Searsport	n/a	n/a	n/a	n/a
439	Shaker	106,000 SF	132,000 SF	n/a	n/a
934	Shaker Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
	Shapleigh ^{17, 23}	54,500 SF	60,500 SF	67,500 SF	77,000 SF
14	Sheepscot	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
667	Sisk	54,500 SF	60,500 SF	67,500 SF	77,000 SF
558 559 very stony	Skerry	54,500 SF	60,500 SF	67,500 SF	77,000 SF
538	Squamscott	106,000 SF	132,000 SF	n/a	n/a
523	Stetson ¹⁶	40,000 SF	46,000 SF	54,500 SF	67,500 SF
340	Stissing	106,000 SF	132,000 SF	n/a	n/a
154 156 extremely bouldery 155 very stony	Success	31,750 SF	35,250 SF	40,000 SF	46,000 SF
118	Sudbury ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
913	Sudbury ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
536	Suffield	54,500 SF	60,500 SF	67,500 SF	77,000 SF
168 169 very stony	Sunapee	54,500 SF	60,500 SF	67,500 SF	77,000 SF
925 945 very stony 469 ortstein	Sunapee Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
402 freq. flooded 2 occas. Flooded	Suncook ¹⁵	31,750 SF	35,250 SF	40,000 SF	46,000 SF
202 freq. flooded 102 occas. flooded	Sunday ¹⁵	31,750 SF	35,250 SF	40,000 SF	46,000 SF
669	Surplus ¹⁶	54,500 SF	60,500 SF	67,500 SF	77,000 SF
993	Surplus ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
68 69 very stony	Sutton	54,500 SF	60,500 SF	67,500 SF	77,000 SF
924	Sutton Variant	77,000 SF	89,000 SF	106,000 SF	132,000 SF
936	Swanton ¹⁶	77,000 SF	89,000 SF	106,000 SF	132,000 SF
438	Swanton ¹⁶	106,000 SF	132,000 SF	n/a	n/a
123	Telos	77,000 SF	89,000 SF	106,000 SF	132,000 SF
84	Thorndike ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF
99	Tunbridge ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF

State-Wide Map Symbol ²³	Soil Type	Square Feet (SF) According to Slope Range			
		0-3% & 3-8%	8-15%	15-25%	25-35%
30 530 variant	Unidilla	40,000 SF	46,000 SF	54,500 SF	67,500 SF
150	Vassalboro	n/a	n/a	n/a	n/a
546 547 very stony	Walpole	106,000 SF	132,000 SF	n/a	n/a
34	Warham ¹⁶	106,000 SF	132,000 SF	n/a	n/a
210	Warwick	31,750 SF	35,250 SF	40,000 SF	46,000 SF
195	Waskish	n/a	n/a	n/a	n/a
58	Waumbek	54,500 SF	60,500 SF	67,500 SF	77,000 SF
597	Westbrook ¹⁵	n/a	n/a	n/a	n/a
	Westminster ^{8, 22}	77,000 SF	89,000 SF	106,000 SF	132,000 SF
49	Whitman	n/a	n/a	n/a	n/a
26	Windsor	31,750 SF	35,250 SF	40,000 SF	46,000 SF
327	Windsor Variant	31,750 SF	35,250 SF	40,000 SF	46,000 SF
88	Winnecook ¹⁷	54,500 SF	60,500 SF	67,500 SF	77,000 SF
103 freq. flooded 9 occas. Flooded	Winooski ¹⁵	54,500 SF	60,500 SF	67,500 SF	77,000 SF
995	Wonsqueak	n/a	n/a	n/a	n/a
29 129 very stony	Woodbridge	54,500 SF	60,500 SF	67,500 SF	77,000 SF
93 very stony	Woodstock ⁸	77,000 SF	89,000 SF	106,000 SF	132,000 SF

F. Key to Superscripts

ⁱ USDA, Natural Resources Conservation Service, National Soil Survey Handbook. 430-VI-NSSH. Washington, D.C.: U.S. Government Printing Office. Soil Survey Staff. 1993.; Soil Survey Manual (revised edition). USDA Handbook No. 18. Washington, D.C.: U.S. Government Printing Office.; and Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys, Agricultural Handbook 436, U.S. Government Printing Office, Second Edition, 1999

¹ **Excessively drained** soils have a texture of very fine sand or coarser in all horizons in the control section and there are no redox features present within a depth of 40 inches in accordance with the Site Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January 1999.

² **Somewhat excessively drained** soils have a texture in any horizon within the particle size control section of loamy very fine sand or finer; and have moderately rapid to rapid permeability in some portion of the control section and there are no redox features present within a depth of 40 inches in accordance with the Site Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January 1999.

³ **Rapidly permeable** soils have permeability rates range from 6.0 to 20 inches per hour based on National Cooperative Soil Survey Standards, NSH 618.44(b). A rough correlation to percolation rate is 3 to 6 minutes per inch.

⁴ **Very rapidly permeable soils** have permeability rate is greater than 20 inches per hour based on National Cooperative Soil Survey Standards, NSH 618.44(b). A rough correlation to percolation rate is less than 3 minutes per inch.

⁵ **Substratum** is defined as the underlying soil material described as the parent material, or C horizon. The upper boundary of this material typically occurs between a depth of 20 to 40 inches and extends to depths greater than 60 inches.

⁶ **Well drained** soils that have textures in any horizon within the particle size control section of loamy very fine sand or finer, have moderate permeability and no redox features occurring above a depth of 40 inches in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January, 1999.

⁷ **Moderately permeable** soils have permeability ranges from 0.6 to 2.0 inches per hour based on National Cooperative Soil Survey Standards, NSH 618.44(b). A rough correlation to percolation rate is 15 to 30 minutes per inch.

⁸ This soil has bedrock occurring at a depth less than 20 inches.

⁹ **Somewhat poorly drained** soils have common distinct or prominent redox features, that are not relict features, at a depth less than 15 inches below the surface but deep enough so as to not classify as poorly or very poorly drained in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January, 1999.

¹⁰ **Moderately well drained** Soils that have distinct or prominent redox features, that are not relict features, between a depth of 15 inches and 40 inches below the soil surface in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 2, January, 1999.

¹¹ **Slowly permeable** soils have permeability ranges between 0.06 and 0.2 inches per hour based on the National Cooperative Soil Survey Standards, NSH 618.44(b). A rough correlation to percolation rate is greater than 60 minutes per inch.

¹² **Very slowly permeable** soils have permeability less than 0.06 inches per hour based on the National Cooperative Soil Survey Standards, NSH 618.44(b). The percolation rate is greater than 60 minutes per inch.

¹³ **Poorly drained** soils are classified as being hydric in New Hampshire and are defined according to the Site specific Soil Mapping Standards for New Hampshire and Vermont. The interpretive limits for the poorly drained drainage class are consistent with the Field Indicators for Identifying Hydric Soils in New England.

¹⁴ **Very poorly drained** soils are classified as being hydric in New Hampshire and are defined according to the Site Specific Soil Mapping Standards for New Hampshire and Vermont. The interpretive limits for the very poorly drained drainage class are consistent with the Field Indicators for Identifying Hydric Soils in New England.

¹⁵ This soil is subject to frequent or occasional flooding. Frequent is defined as greater than a 50 percent chance of flooding in any given year under normal weather conditions, or flooding occurring more than 50 times in 100 years. Occasional is defined as a 5 to 50 percent chance of flooding in any given year under normal weather conditions, or flooding occurring 5 to 50 times in 100 years.

¹⁶ The official range in soil properties for this soil allows for a dual drainage class. Subsequently, two state legend numbers are recognized in the New Hampshire State-Wide Numerical Soils Legend to accommodate both drainage classes. This soil has been listed twice in this table to cover both drainage classes. The state legend number identified on the soil map will identify the proper drainage class and the subsequent soil category to use for determining soil based lot size

¹⁷ This soil has bedrock occurring between depths of 20 to 40 inches.

¹⁸ This soil is classified as poorly drained and has been placed in this category because of the very slowly permeable subsoil and substratum, thereby preventing this soil from contributing to groundwater recharge.

¹⁹ **Subsoil**, as used in this document, represents the zone of maximum soil development identified as the “B” horizons. The subsoil layer typically starts immediate below the surface (A) or subsurface (E) layer and extends to the top of the parent material, or substratum, typically occurring between 20 and 40 inches.

²⁰ **Moderately deep** refers to depths between 20 and 40 inches below the mineral soil surface.

²¹ **Shallow** refers to depths between 10 and 20 inches below the mineral soil surface.

²² This is a tentative soil series pending correlation in 2004. This soil is not officially recognized in the New Hampshire Statewide Numerical Soils Legend as of March 3, 2003. Contact the NRCS State Office (603) 868-7581, for further updates and information on this soil.

²³ This soil is no longer recognized in the New Hampshire Statewide Numerical Soils Legend because of its original broad and vague definition. It has been correlated to another soil name.

Please consult the above referenced document or contact the NRCS State Office (603) 868-7581.

G. Example Calculations

Example One: Conventional Subdivision using Site-Specific Soil Mapping Standards

~ Soil types and slopes are taken from a Site Specific Soil Map prepared by a certified soil scientist according to the published standards.

~ Each lot in a subdivision is calculated individually.

~ The soil carrying capacity must equal 1.0 or more for the lot to meet the soil based lot size requirements.

Soil type	Map symbol	Square feet of soil	Lot size from Table	Divide sq. ft / lot size	Soil carrying capacity
Woodbridge	29B	26400	54500	26400/54500	0.48
Woodbridge	29D	27200	67500	27200/67500	0.40
Pipestone	314B	15100	106000	15100/100600	0.15
Greenwood	295	12300	not allowed		<u>0.0</u>
				Total:	1.03

This lot exceeds the minimum lot size.

Example Two: Cluster Subdivision using Site-Specific Soil Mapping Standards

- ~ Soil types and slopes are taken from a Site Specific Soil Map prepared by a certified soil scientist according to the published standards.
- ~ The number of units is determined using the soils of the entire parcel.
- ~ The sum of the soil carrying capacity is rounded down to the nearest whole number to determine the number of dwellings allowed.

Soil type	Soil map symbol	Square feet of soil	Lot size from Table	Divide sq. ft / lot size	Soil carrying capacity
Windsor	26B	164900	31750	164900/31750	5.19
Woodbridge	29B	164700	54500	164700/54500	3.02
Woodbridge	29C	272100	60500	272100/60500	4.50
Hollis	86C	104100	89000	104100/89000	1.17
Hollis	85E	74300	132000	74300/132000	0.56
Rock outcrop	4500	not allowed			
Eldridge var.	943B	22300	77000	22300/77000	0.29
Scitico	33B	159500	not allowed		
Maybid	134	12300	not allowed		
Total:					14.73

V. Soil Types for Establishing Lot Size Based Upon High Intensity Soil Mapping Standards (HISS) For New Hampshire

A. Introduction

As described in previous sections of this document, the scientific rationale for determining lot size is based, in part, on the soil's ability to absorb precipitation and subsequently dilute nitrates generated from septic systems to an acceptable level so as to protect ground water quality. This is dependent upon specific soil physical properties and internal conditions that influence the soil's ability to provide recharge to groundwater aquifers. These soil properties are observable and measurable by a soil scientist in the field.

Four of the soil physical properties that are most limiting to use and management of the landscape are drainage class, parent material, restrictive features and slope class. These four properties were originally incorporated into High Intensity Soil Mapping Standards for New Hampshire (HISS) by the Soil Science Society of Northern New England in 1987. These standards were intended to be used to prepare soil maps that can be used to interpret lot size by soil type ordinances. They were also intended for use in local subdivision regulations that have requirements for septic system effluent treatment areas, set-back distances from sensitive soil conditions and hydric soil determinations.

Prior to development of the HISS standards, it was common for both planners and applicants for local subdivision and site plan approvals to increase the scale of existing maps, such as the county soil surveys, to the scale of a site plan for use in regulatory reviews. This is not an appropriate or valid use of these soils maps, which were developed at a different scale for general planning purposes and not site specific use. Although they do not provide the extensive technical information provided by a SSSMS map, the HISS map provides site specific documentation of the most limiting physical soil properties on a site. They have been updated as recently as 2002 and can be used for soil based lot sizing according to the HISS Table presented here.

The criteria for a HISS map require six components that provide soils information in a standardized fashion. They are as follows:

1. a base map with a current perimeter survey by a Licensed Land Surveyor, a scale of $\geq 1" = 100'$, topography with ≤ 2 -foot contour intervals and established ground control.
2. a connotative soil legend based upon an established HISS Key to the Soil Types with only one soil type per map unit
3. map unit purity standards of a minimum of 75 percent of the soil properties inferred by the soil map symbol within any mapped unit

-
4. minimum size delineation of 2000 square feet.
 5. standards for accuracy of soil boundary line placement of within 20 feet; and
 6. that the map be prepared by a Certified Soil Scientist or his/her apprentice.

The High Intensity Soil Maps for New Hampshire, Standards, SSSNNE Special Publication No. 1, revised 2002 contains the complete standards and is available from www.sssnne.org.

B. Table HISS: Establishing Lot Sizes Using High Intensity Soil Map Units

Soil Type	B	Slope C	D	E
111-H	31750	35250	40000	46000
112-H	31750	35250	40000	46000
114-H	77000	89000	106000	132000
117-H	54500	60500	67500	77000
118-H	65750	74750	86750	104500
121-H	31750	35250	40000	46000
122-H	31750	35250	40000	46000
124-H	77000	89000	106000	132000
127-H	54500	60500	67500	77000
128-H	65750	74750	86750	104500
161-H	31750	35250	40000	46000
164-H	77000	89000	106000	132000
167-H	54500	60500	67500	77000
168-H	65750	74750	86750	104500
211-H	31750	35250	40000	46000
212-H	31750	35250	40000	46000
214-H	77000	89000	106000	132000
217-H	54500	60500	67500	77000
218-H	65750	74750	86750	104500
221-H	40000	46000	54500	67500
222-H	40000	46000	54500	67500
223-H	54500	60500	67500	77000
224-H	77000	89000	106000	132000
227-H	54500	60500	67500	77000
228-H	65750	74750	86750	104500
231-H	40000	46000	54500	67500
234-H	77000	89000	106000	132000
237-H	54500	60500	67500	77000
238-H	65750	74750	86750	104500
243-H	54500	60500	67500	77000
247-H	54500	60500	67500	77000

Soil Type	B	Slope C	D	E
248-H	65750	74750	86750	104500
253-H	54500	60500	67500	77000
257-H	54500	60500	67500	77000
258-H	65750	74750	86750	104500
261-H	40000	46000	54500	67500
263-H	54500	60500	67500	77000
264-H	77000	89000	106000	132000
267-H	54500	60500	67500	77000
268-H	65750	74750	86750	104500
275-H	40000	46000	54500	67500
311-H	54500	60500	67500	77000
312-H	54500	60500	67500	77000
313-H	54500	60500	67500	77000
314-H	77000	89000	106000	132000
317-H	54500	60500	67500	77000
318-H	65750	74750	86750	104500
321-H	54500	60500	67500	77000
322-H	54500	60500	67500	77000
323-H	54500	60500	67500	77000
324-H	77000	89000	106000	132000
325-H	54500	60500	67500	77000
327-H	54500	60500	67500	77000
328-H	65750	74750	86750	104500
331-H	54500	60500	67500	77000
332-H	54500	60500	67500	77000
333-H	54500	60500	67500	77000
334-H	77000	89000	106000	132000
337-H	54500	60500	67500	77000
338-H	65750	74750	86750	104500
343-H	54500	60500	67500	77000
344-H	77000	89000	106000	132000
347-H	54500	60500	67500	77000
348-H	65750	74750	86750	104500
353-H	106000	132000	N/A	N/A
354-H	106000	132000	N/A	N/A
357-H	106000	132000	N/A	N/A
358-H	106000	132000	N/A	N/A
361-H	54500	60500	67500	77000
363-H	54500	60500	67500	77000
364-H	77000	89000	106000	132000
367-H	54500	60500	67500	77000
368-H	65750	74750	86750	104500

Soil Type	B	Slope C	D	E
374-H	77000	89000	106000	132000
375-H	54500	60500	67500	77000
411-H	77000	89000	106000	132000
412-H	77000	89000	106000	132000
413-H	77000	89000	106000	132000
414-H	77000	89000	106000	132000
417-H	77000	89000	106000	132000
418-H	77000	89000	106000	132000
421-H	77000	89000	106000	132000
422-H	77000	89000	106000	132000
423-H	77000	89000	106000	132000
424-H	77000	89000	106000	132000
427-H	77000	89000	106000	132000
428-H	77000	89000	106000	132000
431-H	77000	89000	106000	132000
432-H	77000	89000	106000	132000
433-H	77000	89000	106000	132000
434-H	77000	89000	106000	132000
437-H	77000	89000	106000	132000
438-H	77000	89000	106000	132000
443-H	77000	89000	106000	132000
444-H	77000	89000	106000	132000
447-H	77000	89000	106000	132000
448-H	77000	89000	106000	132000
453-H	106000	132000	N/A	N/A
454-H	106000	132000	N/A	N/A
457-H	106000	132000	N/A	N/A
458-H	106000	132000	N/A	N/A
461-H	77000	89000	106000	132000
463-H	77000	89000	106000	132000
464-H	77000	89000	106000	132000
467-H	77000	89000	106000	132000
468-H	77000	89000	106000	132000
475-H	77000	89000	106000	132000
511-H	106000	132000	N/A	N/A
512-H	106000	132000	N/A	N/A
513-H	106000	132000	N/A	N/A
514-H	106000	132000	N/A	N/A
517-H	106000	132000	N/A	N/A
518-H	106000	132000	N/A	N/A
521-H	106000	132000	N/A	N/A
522-H	106000	132000	N/A	N/A
523-H	106000	132000	N/A	N/A

Soil Type	B	Slope C	D	E
524-H	106000	132000	N/A	N/A
527-H	106000	132000	N/A	N/A
528-H	106000	132000	N/A	N/A
531-H	106000	132000	N/A	N/A
532-H	106000	132000	N/A	N/A
533-H	106000	132000	N/A	N/A
534-H	106000	132000	N/A	N/
537-H	106000	132000	N/A	N/A
538-H	106000	132000	N/A	N/A
543-H	106000	132000	N/A	N/A
544-H	106000	132000	N/A	N/A
547-H	106000	132000	N/A	N/A
548-H	106000	132000	N/A	N/A
553-H	N/A	N/A	N/A	N/A
554-H	N/A	N/A	N/A	N/A
557-H	N/A	N/A	N/A	N/A
558-H	N/A	N/A	N/A	N/A
561-H	106000	132000	N/A	N/A
563-H	106000	132000	N/A	N/A
564-H	106000	132000	N/A	N/A
567-H	106000	132000	N/A	N/A
568-H	106000	132000	N/A	N/A
575-H	106000	132000	N/A	N/A

The soil types listed below have one or more limiting characteristics that make the soil type “NA” or require on-site investigation, no matter what other characteristics of the soil may be present

Soil Type	Minimum Lot Size
6***H	N/A very poorly drained soil
*66*H	N/A fill does not meet the Standards for Fill Material (See Key to Soil Types
76**H	On-site evaluation needed. (Usually filled, excavated or regraded sites)

The Soil Type symbols are explained in “High Intensity Soil Maps for New Hampshire. Standards, SSSNNE Special Publication No.1, revised July 2002.”

“N/A” means not allowed. Doesn’t count at all toward lot size.

“**” means any slope or any number.

C. Example Calculations

Example One: Conventional Subdivision using High Intensity Soil Mapping Standards

- ~ Soil types and slopes are taken from a High Intensity Soil Survey prepared by a certified soil scientist according to the published standards.
- ~ Each lot in a subdivision is calculated individually.
- ~ The soil carrying capacity must equal 1.0 or more for the lot to meet the soil based lot size requirements.

Soil type	Square feet of soil	Lot size from Table	Divide sq. ft / lot size	Soil carrying capacity
323BH	26400	54500	26400/54500	0.48
323DH	27200	67500	27200/67500	0.40
511BH	15100	106000	15100/106000	0.15
681BH	12300	not allowed		<u>0.0</u>
			Total:	1.03

This lot exceeds the minimum lot size.

Example Two: Cluster Subdivision using High Intensity Soil Mapping Standards

- ~ Soil types and slopes are taken from a High Intensity Soil Survey prepared by a certified soil scientist according to the published standards.
- ~ The number of units is determined using the soils of the entire parcel.
- ~ The sum of the soil carrying capacity is rounded down to the nearest whole number to determine the number of dwellings allowed.

Soil type	Square feet of soil	Lot size from Table	Divide sq. ft / lot size	Soil carrying capacity
111BH	164900	31750	164900/31750	5.19
323BH	164700	54500	164700/54500	3.02
323CH	272100	60500	272100/60500	4.50
224CH	104100	89000	104100/89000	1.17
224EH	74300	132000	74300/132000	0.56
Rock outcrop	4500	not allowed		0
443BH	22300	77000	22300/77000	0.29
553BH	159500	not allowed		0
653BH	12300	not allowed		0
			Total:	14.73

VI. References

- ❖ A procedure to Determine Optimum Density for Homes Using Individual Wastewater Treatment Systems Based on Nitrogen in Groundwater Recharge, National Association of Home Builders, National Research Center, May 1989
- ❖ High Intensity Soil Maps for New Hampshire, Standards, SSSNNE Special Publication No.1, Version, Date: July 16, 2002 Available: www.sssnne.org
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- ❖ Environmental Planning for on-site Wastewater Treatment in New Hampshire: Technical Report of the Ad Hoc Committee for Soil-Based Lot Size, NH DES and Rockingham County Conservation District, June 1991
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